

New strategic  
plan

Trinity mutual  
aid

Aviator takes  
top award

Sunscreen for  
the grid

# • CLOSED • Circuit

WESTERN AREA POWER ADMINISTRATION

APRIL 2023

A black helicopter is parked on a sandy desert tarmac. In the background, there are two pickup trucks and a person kneeling next to some equipment. The scene is set against a backdrop of rugged mountains under a clear blue sky.

**Powering  
WAPA  
forward**





# CLOSED Circuit

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### On the cover

Local police stand next to WAPA’s Bell 407 helicopter following an in-flight incident with a paraglider, pictured on the left.





# 'There's no way out of this'

By Stephen J. Collier



**I**t was a clear, crisp autumn day over Newman Peak in Arizona's Picacho Mountains. The heat of the summer had given way to cool, tolerable breezes along the desert basin. A perfect day for a flight.

*continued on Page 2*

WAPA uses helicopters for Maintenance activities, including ferrying employees to infrastructure in remote locations such as this tower near Lake Mead in Nevada.





After Schuck's near-death experience, a crew loaded the aircraft on a trailer and transported it to Fort Collins, Colo., for inspection. WAPA repaired the damaged helicopter within weeks and returned it to service.

Just a few minutes' flight from the Western Area Power Administration's Desert Southwest office, WAPA Helicopter Pilot **Logan Schuck** embarked on a mission he'd done time and time before: ferrying communication technicians from the helipad on the desert floor to the top of the peak. There, the technicians perform routine inspections and maintenance on the organization's radio repeaters and microwave relays. While WAPA serves a number of these sites across the West, this particular location is only accessible by helicopter, making it one of many missions WAPA pilots perform to ensure grid reliability.

Nov. 10, 2021, would be anything but normal for the 12-plus-year pilot. It would be the day Schuck cheated death.

"It's a 40-minute flight, generally, from Phoenix," Schuck recalled. "You meet the communications guy at the bottom of the mountain, two minutes up, land, shut down, wait for them to finish, then bring them back. Pretty routine stuff."

Just three minutes after dropping off Communications Technician **Joe Gruenwald** on the helipad below, Schuck's skills of a pinpoint flier would be put to the test. Flying at 500 feet off

the ground, a typical altitude for WAPA helicopters, and traveling at 150 miles per hour, Schuck's helicopter began to react abnormally.

"Flying along, the helicopter began to yaw to the left," Schuck said. "Then it moved back to center. When a helicopter does that, you're trained to see that as a sign your aircraft is losing power. At the time, I'm thinking I'm losing torque in the main rotor, which is a symptom of a left yaw. That's when I slowed the aircraft down."

For aviators, a yaw is a change in the aircraft's direction along a horizontal axis. In the case of Schuck's aircraft, it was jerking to the left – without his direction. As he processed the sudden movement, he powered the aircraft back to just over 100 mph. This gave Schuck the chance to check gauges, where he determined the helicopter's systems were operating correctly.

"Everything seemed normal at that point," he said.

#### **'This is how it happens.'**

With the horizon out in front, and miles of desert and rock below, for a split second, a nervous Schuck believed the aircraft had stabilized. Then, as if being grabbed from the air like a child with their model airplane

in hand, the Bell 407 helicopter plummeted from the sky, its nose aiming for the sandy ground below. Schuck was thrust forward, jerked toward the windshield and then back again. The helicopter began to violently pull to the left, tucking downward.

"I felt like I had run into something, but nothing was out there. And then I had this feeling in my gut – this is how it happens," Schuck said. "I've been in the [aviation] industry for 12 years now, and I remember thinking of a friend of mine I had lost earlier in 2021, and that this was the feeling he had before he died."

Schuck, a soon-to-be-father, frantically worked to regain control of the aircraft.

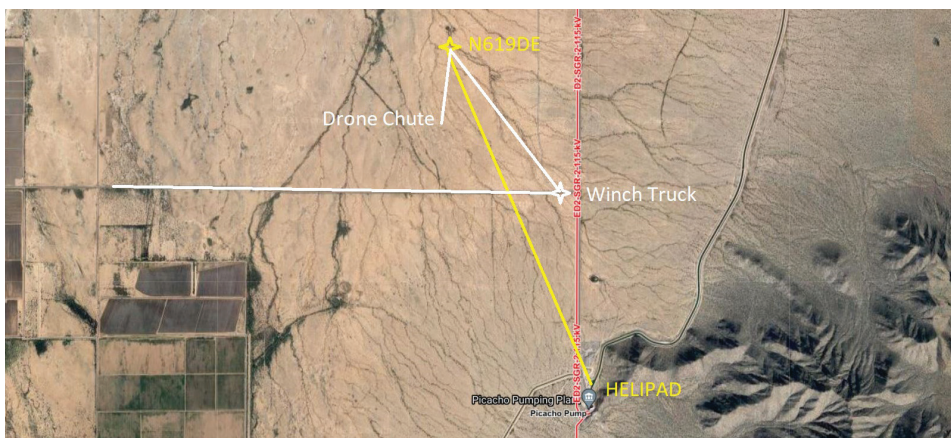
"It just wasn't giving me the control I needed," he said.

With seconds until impact, screaming toward the ground, Schuck maneuvered the control stick in a last-ditch effort.

"I was preparing to pancake into the ground. In my mind, there was no way out. It was a crazy feeling to know there's no possible way to live through this," he explained.

Less than 100 feet to the desert floor below, he thrust the control stick into his gut. Then, as if being released from





This diagram illustrates the paths of travel during the near-miss incident, including Schuck's flight (diagonal yellow line) and the truck's route (horizontal white line).

an unseen force, the aircraft slowed, providing Schuck a chance to save himself, and possibly, the helicopter. Still processing everything, his first instinct was to land the helicopter, shut down its systems and evacuate. He identified a small clearing among the desert brush ahead as the aircraft came in for a hard landing. With a hurt back, adrenaline coursing through his veins and dust enveloping him and his aircraft, Schuck gained focus, immediately shutting down the helicopter's fuel valve.

"At that point, I just wanted out of the helicopter," he bluntly recalled.

Wiggling out of his harness, he swiftly exited the aircraft.

"I got a few feet from the aircraft as I composed myself. I looked back at the aircraft, and beyond disbelief, I couldn't believe the helicopter was completely fine. At this point, I still don't know what is going on," he said. "I get halfway around the aircraft, and that's when I called dispatch to let them know I had made an emergency landing."



Image illustrates visible damage caused by the paraglider's kevlar line to the helicopter's landing gear.

WAPA's helicopters include GPS trackers on board, which alert dispatch crews when an aircraft has landed. Remaining calm, Schuck informed dispatch of the issue, even as frantic concern came through on the other end of the radio. He relayed to WAPA's dispatchers that he would radio Gruenwald, whom he had just dropped off minutes before, to pick him up.

### Is this a movie?

Now in radio contact with Gruenwald, Schuck began to analyze his aircraft more closely. He noticed paint was missing from a section of the crosstube portion of the landing gear. The tube, which cuts across the bottom of the helicopter, connects the skids that contact the ground when the helicopter lands.

That's when Gruenwald provided a clue as to what caused the emergency landing.

"The communications guy called, telling me he ran into this guy with his pickup truck who said I hit their winch line. At that moment, I said to myself ... 'I just flew through a winch line towing a paraglider,'" he said. "That's when I thought – oh my God, I just killed someone and had no idea what was going on."

At the same time, Schuck could hear sirens approaching.

"I learned later the guy with the pickup truck and winch had called 911," he said. "Apparently, he watched as my helicopter went downward. He thought I crashed into the desert."

Standing in the open desert, Schuck started to hear "weird noises" from above. Looking up, he watched as a paraglider corkscrewed downward toward him.

"With everything happening, at this point, I'm thinking I'm in a movie and this is just crazy," he said.

The paraglider landed, asking Schuck if he was alright. Schuck, processing the incident through the lens of his numerous years of flying, was quickly piecing together how this incident happened. The paraglider revealed he had been at 6,000 feet, connected to a static line on the ground – in this case, a moving pickup truck. The valley below was already around 1,500 feet above sea





Helicopter Pilot **Logan Schuck** stands next to WAPA's Bell 407 helicopter in front of a stretch of well-maintained transmission lines.

level. It quickly became apparent the paraglider was 4,000 feet higher, or nearly three-quarters of a mile, above Schuck.

"Now I've gone from being confused to being upset because of what these guys were doing," he remembered. "I almost died because of these guys. For a helicopter to be flying at my speed and altitude, imagine driving on the road through a spiderweb at 150 miles an hour. There's just no way for you to see a static line the thickness of a shoelace."

The paraglider's line, later identified as one-eighth-inch, Kevlar-based paracord, had wrangled his helicopter's underside along the landing skids. At the same time, the winch on the pickup truck below rapidly pulled both the cord and the helicopter down. But somehow, the helicopter had freed itself from the cord.

Now en route to a local hospital to get checked out, and with police reports filed and his supervisor, Aviation Manager **Richard Westra**, informed, Schuck contacted his wife to let her know he was fine and getting checked out by doctors, and most importantly, that he would be coming home.

### Turning terror into action

With the dust settled from Schuck's incident, it was time to fully understand what happened. He and other Aviation staff began to research Federal Aviation Administration guidelines surrounding tethered flight, as well as the internet for more clues on the paraglider team.

Schuck found that, according to FAA regulations, aircraft or flying objects are approved for tethered flight up to 500 feet, above which the towed aircraft must be released. Their research showed the regulations had some gray area, but it was undeniable that tethered aircraft cannot cause a hazard to others.

"When something like this happens, you feel a duty to spread the word to ensure others are safe," Schuck said.

At the same time, the helicopter had been transported to WAPA's aircraft maintenance facility in Fort Collins, Colorado. There, even more evidence presented itself from the incident. The tow cable had damaged and dinged other parts of the aircraft, including slicing through the plexiglass windows and sheet metal along the spine of the rotor. Along the skids, paint had been completely removed, and the Kevlar-

based cord had slashed visible cuts into the crosstube metal.

"We found out these types of [paraglider] activities were happening all over the place," Schuck said. "This isn't something that just affects helicopters. When you think how far up they are going, they're affecting a ton of aircraft, including business jets that take off and land around 6,000 feet going into nearby Tucson."

Because of the incident, WAPA's Aviation team advocated to the FAA to update its regulations governing tethered paragliders and unpowered aircraft flights. Those regulation changes are pending consideration.

For his actions of airmanship under intense pressure, Schuck received "Best Pilot" awards from both the Department of Energy and the General Services Administration's Interagency Committee for Aviation Policy. The latter award secured the title "Best Pilot" throughout U.S. government agencies for 2022.

Reacting to the award, Westra commended Schuck's determination and pilot skills, which saved Schuck's life and one of WAPA's aircraft.

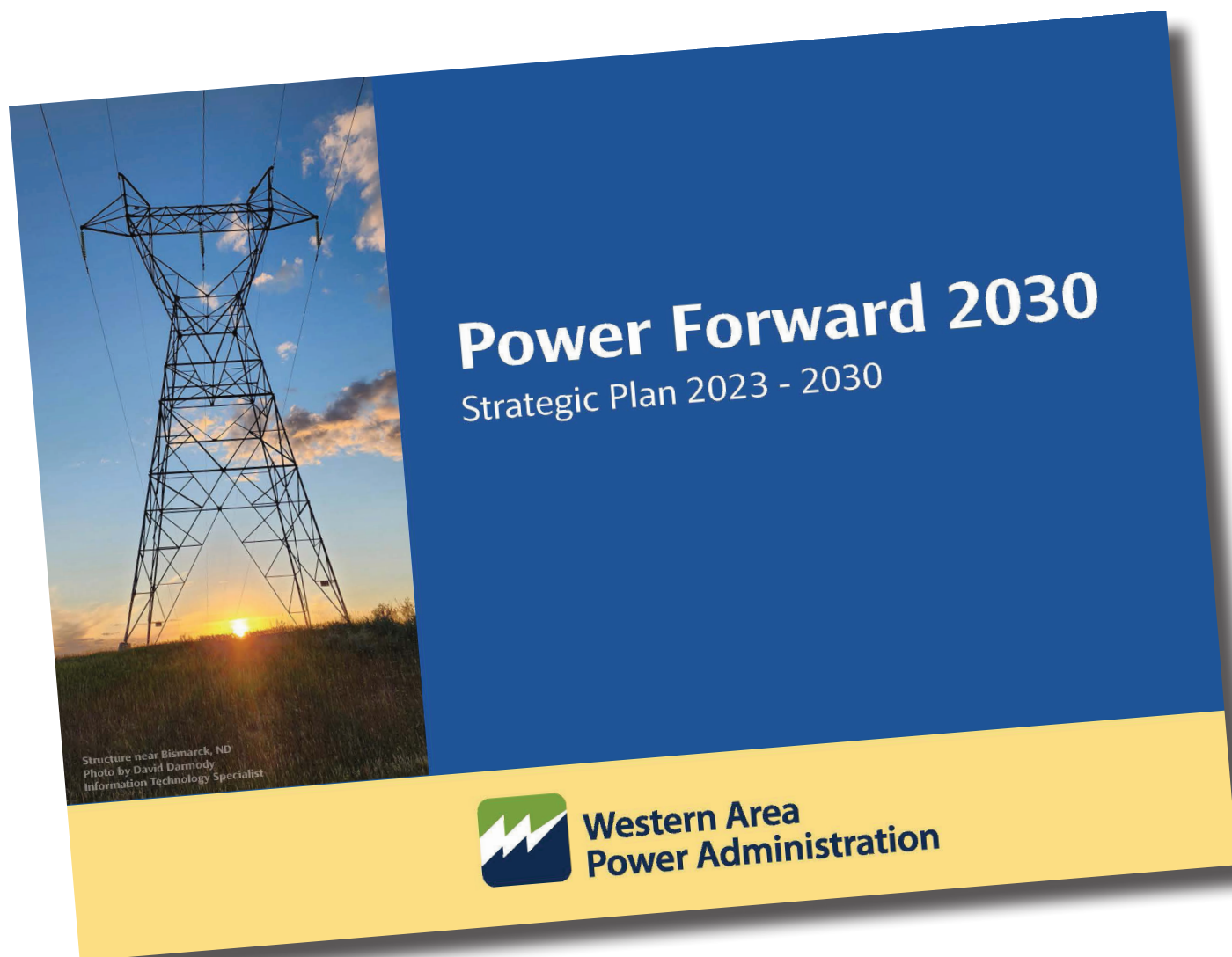
"Instead of giving up, Logan continued to fly the helicopter. He had no idea what was causing this other than he was literally falling out of the sky," Westra said. "WAPA provides us the tools and opportunities to be trained at the highest levels, which have led our Aviation department to be seen as the DOE's benchmark program. Knowing my aviators can perform to the extent they do every day is a direct reflection on having the tools and funds to get the job done. I have nothing but praise for them."

As for Schuck, his love for flying helicopters endures. He explained that several things helped him walk away from that flight, including his training.

"While this particular situation didn't correlate to any training I've received, having that experience of knowing your aircraft, having time in the seat and knowing what's it supposed to feel like was essential," he said. "And to be honest, it felt like someone was looking over me. There were so many scenarios where this aircraft could have crashed." □

*Note: The author is a public affairs specialist.*





# New strategic plan powers WAPA forward

By Leah Shapiro

**N**early a year in the making, WAPA released its updated strategic plan Feb. 7, 2023. *Power Forward 2030* will guide WAPA's strategic direction for the next seven years as the organization works to safeguard a sustainable energy future, modernize the grid and invest in its employees.



# Power Forward 2030

WAPA is no stranger to strategic planning. The organization published its first strategic plan nearly 30 years ago and has continued to grow and mature its efforts. Although each plan has strategically aligned with WAPA's mission, the goals and objectives have changed over time to reflect the state of the industry as well as current events and societal shifts.

*Power Forward 2030*, or 'PF30' for short, "sets out an organizational strategic direction where reliable and flexible hydropower play a critically essential role in a clean energy future," said Administrator and CEO **Tracey LeBeau**.

## STRATEGIC GOALS

Safeguard a Sustainable Energy Future

Modernize the Grid

Invest in Our Employees

## STRATEGIC OBJECTIVES

### Customer

Prepare and adapt to a changing energy landscape

Provide excellent customer service

Preserve hydropower value

Leverage strategic partnerships

### People/Culture

Embrace inclusion and diversity

Cultivate our value-based, high-performance culture

Grow skills and expertise

Integrate strategic workforce management

### Resource Stewardship

Optimize investments in system reliability

Improve cost efficiency

Facilitate transmission solutions

### Internal Process

Mature governance, risk management and compliance

Optimize service delivery

If you are interested in reading more about how WAPA developed the plan, check out the "Employee feedback shapes strategic plan" and "Developing Power Forward 2030" stories in the May and December 2022 issues of the *Closed Circuit*.



## Plan ensures alignment

PF30 outlines three strategic goals. In addition to supporting WAPA's mission and vision, they define the critical areas where WAPA will need to invest time and resources to reach its desired outcomes. From there, it defines 13 strategic objectives, organized into four perspectives – Customer, People/Culture, Resource Stewardship and Internal Process – that align with the plan's goals, ensuring WAPA progresses in the right areas to advance the plan.

"Identifying our objectives through the lens of these different perspectives ensures we hit all areas of the organization," said Chief Strategy Officer **Kerry Whitford**.

Whitford explained that if you only think about the plan from one perspective, you may miss some necessary pieces. She offered the example that if you want to "prepare and adapt to a changing energy landscape" (an objective that falls under the customer perspective), you must also consider the workforce skills you will need to get there, the resources you will need and the processes that will support and sustain changes.

Under each strategic objective, there are also strategic initiatives, which outline the actions and projects necessary to achieve the objective. These serve as the "how" WAPA will accomplish its objectives. To ensure initiative progress and success, each has an assigned senior strategic champion and an initiative lead, often a subject matter expert in the initiative topic.

## Improving on existing success

Employees may notice some similarities to WAPA's previous strategic plan, *Strategic Roadmap 2024*, such as high-level goals, objectives designed to support them and overall alignment with WAPA's mission and vision.

"When you're defining a path forward, you want to make sure you keep the good elements of your plan. You want to build on them and keep the momentum," Whitford said.

In some cases, plan elements have been carried forward. Other previous elements have become operationalized, or integrated, into WAPA's organizational culture – they've become part of the fabric of who WAPA is and how it operates, therefore they are no longer identified as a strategic focus.

Employees have also noticed that some parts of the plan look different. Early feedback since the plan's release raises the question about the number of strategic objectives and if WAPA might be trying to accomplish too much.

Many of the Tactical Action Plan items of the previous plan were new, standalone projects, developed to advance the plan's objectives and goals. There were challenges with resourcing the projects, even though they were prioritized as part of the plan. To this point, Whitford added, "In PF30, many of the strategic initiatives are in *support* of existing efforts – not on top of them. The strategic initiatives are aimed at taking something we're already doing and doing a piece of it differently ... more strategically."

Whitford further explained that the initiatives might be an expansion or improvement of a process. For example, WAPA already uses data to target investments in equipment reliability. The objective to optimize investments in system reliability expands and matures those efforts. Most importantly, PF30 is intended to prioritize activities and resources by identifying the most critical. "We might prioritize or



align efforts differently to ensure achievement of strategic objectives and goals,” she added.

Another key point is that WAPA will not attempt to address each initiative and objective immediately or simultaneously. They will be staggered.

“When the XLT identified and prioritized the strategic initiatives, they considered both short-term, less complex and longer-term, more resource-intensive efforts,” Whitford explained. “Some will be short and sweet – quick wins. Others may take a few years, and that’s ok.” Because many plan elements are related and almost every objective aligns to all three goals, progress in any one area supports progress in others.



### People power the plan

The Strategy Office is eager for employees to become familiar with the plan and ultimately begin making connections between their individual contributions and PF30. The Strategy Office, Public Affairs and WAPA's senior managers will partner with programs across the organization to ensure PF30 information is available and to share progress. However, it will be less successful and engaging if they do the work alone.

Last month, Sierra Nevada's Director of Maintenance and Construction **Tim Alme**, who also serves as the WAPA Maintenance Managers Council chair, delivered a WMMC

update to WAPA senior managers. In it, he included a slide showing how the WMMC aligns with PF30, outlining the specific perspectives and objectives the council supports and identifying activities that advance the objectives.

When asked about his early adoption in making those connections, Alme offered, “I wanted to highlight what the WMMC is doing and how we are being innovative and strategic. WMMC members quickly suggested the exercise of tying our work to *Power Forward 2030*.”

The philosophy he shares with his team in SN, as well as the WMMC, is that strategic plans and core values are not just words on paper – they are guideposts. “They help show the path forward. They inform our actions and our decisions,” Alme added. “They can – and should – help us focus on the most important things we work on. We need to incorporate them into our work and *how* we work, and we need to talk about it.”

The development of PF30 represents a living exercise in the core value to “Seek. Share. Partner.” Employees, customers and stakeholders gave input at each key milestone of strategy formulation. As much as this plan is “WAPA's,” it also belongs to its people. Stay tuned for opportunities to tell your stories about your connection to PF30 and how you help power WAPA forward.

### What's next?

Around the time this story is published, WAPA's strategic initiative champions will participate in a third workshop to develop their initiative implementation plans, which will outline the actions and milestones needed to make progress on the objectives. Concurrently, WAPA will develop key performance indicators to evaluate and measure progress toward the objectives. Additionally, WAPA will direct resources toward strategic priorities, with formalized implementation and reporting beginning by Oct. 1.

“*Power Forward 2030* is intended to drive the ‘strategic’ in ‘strategic plan,’” said Whitford. “I am confident it will keep us all moving in the same direction as we work toward the goals we know to be so critical to our industry, our customers and our success.”

LeBeau added, “As we face a new era of change, including an evolving energy industry, large infrastructure investments, increasing threats and severe weather risks, we will leverage our productive legacy to power forward.” □

To read the full plan, visit [wapa.gov](http://wapa.gov), About, Strategic Planning.



*Note: The author is a management and program analyst.*



# TIP powers forward in support of strategic plan

**W**APA's new strategic plan, *Power Forward 2030*, not only helps define the organization's trajectory for the next seven years, but it can also help individual WAPA programs move ahead in an aligned manner supporting a coherent strategy.

The Transmission Infrastructure Program – WAPA's revolving loan program that aims to leverage federal funds and attract non-federal co-investment to support the development of transmission, energy storage and related infrastructure – provides a case in point.

But first, a bit about how TIP works.

## Get to know TIP

"I want our customers and all TIP stakeholders to know that this program stands ready to help get their project to the finish line and put steel in the ground," said Senior Vice President and Transmission Infrastructure Program Manager **Paul Schwabe**.

Congress authorized a permanent \$3.25 billion revolving borrowing authority for

WAPA to help finance new and upgraded transmission, energy storage and related facilities projects located in the organization's service territory that facilitate the delivery of renewable energy. WAPA's borrowing authority from the U.S. Treasury, managed by TIP, helps make projects more competitive and beneficial to ratepayers by providing low-cost capital to a project.

TIP provides financing options for a range of project sizes and development timelines from generally large-scale, long-development transmission projects in the multi-billion-dollar category, as well as relatively smaller and quicker development projects, such as utility-scale battery storage. Other forms of energy storage projects also qualify, including pumped hydro storage and compressed air systems among other types. Many experts see

Project Manager **Shawn Bertram** captured this image of the Parker-to-Blythe #2 transmission line in the shifting sands of Southeastern California's Rice Valley Dunes.



further developing a diverse portfolio of energy storage technologies that can store and discharge energy over various durations as crucial in reliably integrating more variable wind and solar energy into the grid.

“One of my goals is to reach a steady TIP partnership base that encompasses near-term, medium-term and long-term opportunities,” Schwabe said. “Looking across project types, transmission will stay at the heart of the program but will be supplemented by energy storage projects and also keeping eye on emerging sectors and different customer types.”

One thing to keep in mind: a TIP loan constitutes a federal action, and these projects will be required to complete some level of environmental analysis under the National Environmental Policy Act before a TIP loan can be approved.

In accordance with NEPA, large-scale transmission projects typically require a full environmental impact statement, while it may be sufficient for smaller-scale interconnection and energy storage projects to complete the ‘categorical exclusion’ or ‘environmental assessment’ levels of NEPA review.

### **TIP’s value proposition**

TIP currently provides both financing and development assistance, and delivers value based on what Schwabe calls “The Three C’s”: customers, capital and commercialization.

“The hallmark of the TIP program, of course, is the access to low-cost and long-term capital. That can help with affordability and cost-control to the ratepayer, particularly in the higher-interest and inflationary-pressure market we are experiencing in 2023,” Schwabe said.

With more than 700 customers, WAPA has a deep well of trusted partners who may leverage TIP’s capital lending or project development expertise. In addition to WAPA’s customers, TIP works with private infrastructure developers and investors pursuing transmission and storage projects within WAPA’s service territory.

In terms of commercialization, TIP can also connect customers and other developers with WAPA subject matter

experts who can help lead the NEPA process, identify market opportunities and assist with engineering and interconnection studies and several other requirements to bring a project to market. Uniquely, WAPA has direct expertise and experience in transmission development, operations, maintenance, marketing and ownership, which it can leverage to support the development of projects and bring them to market, benefiting a wide range of stakeholders.

### **Powering forward with TIP**

WAPA’s new strategic plan also served as an opportunity to refocus and reinvigorate TIP’s purpose in service of WAPA’s mission.

TIP primarily supports the second of three topline strategic goals outlined in *Power Forward 2030*, “Modernize the Grid.” In turn, TIP’s work directly bolsters Objective 3.3 that states, “We leverage federal and non-federal financial and technical resources to expand and modernize the grid.”

Specifically, it outlines the need for TIP to provide low-cost capital to facilitate the delivery of renewables to the grid; facilitate development of new and upgraded transmission lines and related facilities that strengthen the grid; and leverage WAPA’s expertise and experience to contribute to effective transmission solutions.

Uniquely, this part of the strategic plan specifically calls out TIP’s targeting and facilitation of energy storage projects as a key strategic initiative aimed at supporting WAPA customers’ needs in this area.

### **Meading by example**

Last year, WAPA’s Desert Southwest region and TIP sought submissions that proposed partnerships to upgrade existing facilities owned by WAPA or construct new transmission facilities around Boulder City, Nevada, and the nearby Mead Substation energy trading hub. Secondarily, it targeted potential agreements taking transmission service from or interconnecting to the upgraded or newly constructed transmission facilities.

“We received several engaging responses, and we are now vetting those

ideas and pursuing further discussions and progressions with these potential partners,” Schwabe said.

“I’m excited about this outreach opportunity to build further connections with our customers and stakeholders,” said Senior Vice President and Desert Southwest Regional Manager Jack Murray. “DSW and TIP will continue to follow up on these promising initial steps as we explore ways to better serve our customers,” he added.

### **TIPping point ahead?**

In 2023, TIP plans to focus on a range of priorities, including strengthening and expanding partnership opportunities and adapting to recent changes in the project financing industry resulting from the Inflation Reduction Act and other recent legislation. TIP will also meet with more customers to discuss potential improvements, efficiencies and informational needs to ensure they understand and can access this important resource.

“In late 2021 and 2022, we saw the passage of multiple pieces of federal legislation that dramatically changed the industry through new and structurally different long-term incentives, new federal loan programs for transmission and further capitalization of other existing loan programs,” Schwabe said.

“We will coordinate regularly and closely with these programs going forward,” he said.

For his part, Schwabe plans to meet with as many potential partners as possible to discuss how they might collaborate to provide beneficial outcomes for each party.

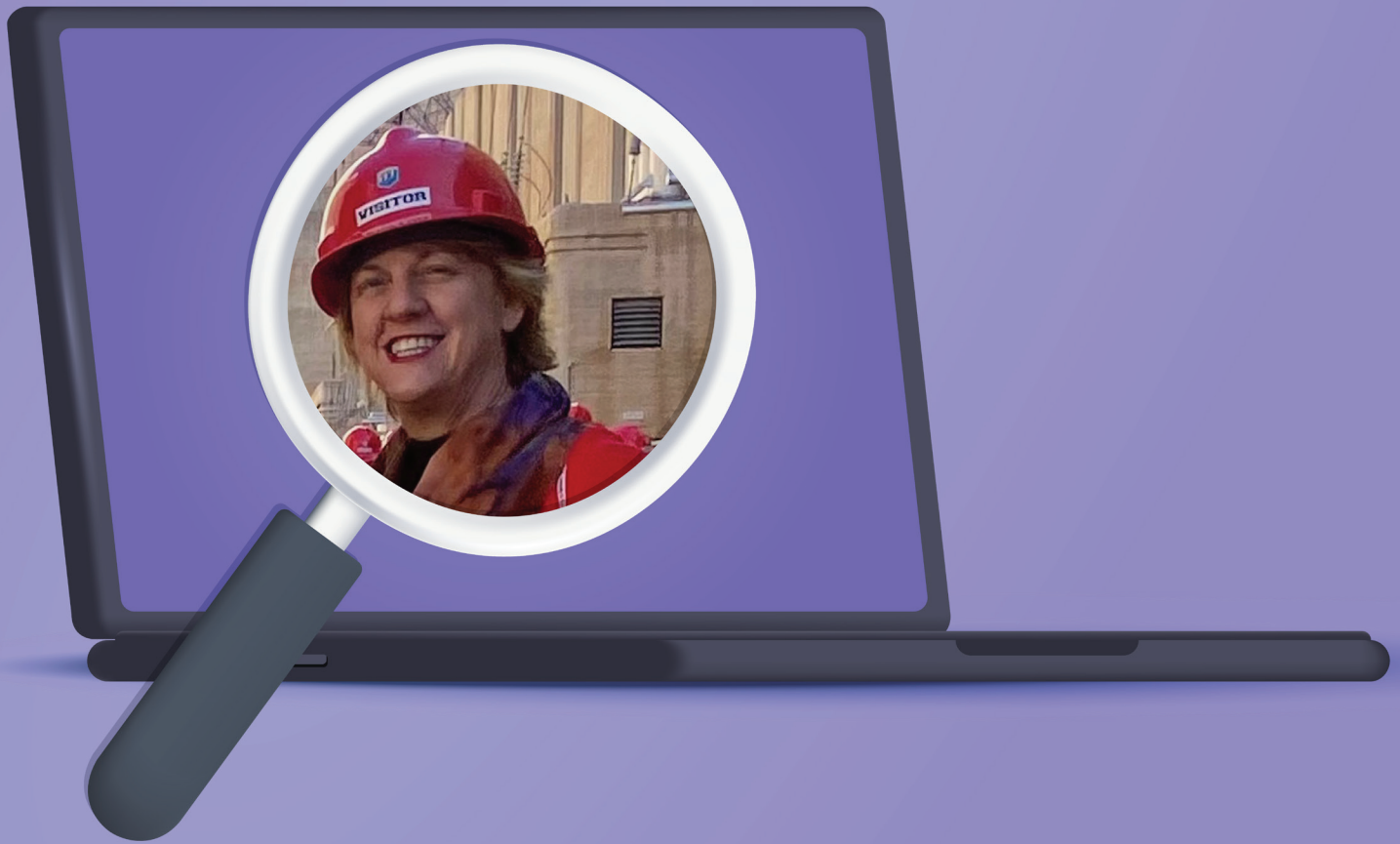
“TIP’s doors are open, and I really enjoy engaging WAPA customers, private infrastructure developers, and the many different TIP stakeholders on these exciting, potentially game-changing opportunities,” Schwabe concluded. “I see the next decade ahead as a golden opportunity for the TIP program.” □

Learn more about TIP and how to get projects started. Visit [wapa.gov](https://wapa.gov), Transmission, Transmission Infrastructure Program.





# Get to know HR's Shared Service Center Director



T

he Power Marketing Administration Human Resources Shared Service Center Director **Cheryl Reese** has led WAPA's HR program since 2021. Her team provides a full range of human capital management functions for federal employees in the Southeastern Power Administration, Southwestern Power Administration and WAPA. *Closed Circuit* sat down with Reese to get to know her better.



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### What brought you to WAPA initially?

A promotion. I started with WAPA just a few days before 9/11. What I found was a very progressive organization, open to innovation and new ideas in Human Resources. The message was, "Make your business case and show us what you can do." I thrived in this environment and was given a lot of room to create cool HR innovations that boosted client satisfaction.

I came to really understand and love the WAPA mission. I grew up on a ranch in southeast Wyoming, driving a tractor around the transmission towers on our property. Coming from this background, a lot of the maintenance concepts made sense to me. I identify strongly with our craft community. It made for a good fit in my new job.

### What has been your most rewarding experience at WAPA so far?

Serving as the HR Director for the PMA HR SSC – taking care of 1,700 employees in the power marketing administrations – is my dream job. My goal is to have the most innovative, engaged HR shop in the Department of Energy. Our HR employees are some of the hardest working and most dedicated in DOE. We create a workspace where HR specialists are encouraged to be data driven, proactive and understand the mission of the marketing administrations. I love our WAPA employees, supervisors and the WAPA Senior Leadership Team. Several of my favorite people in the world work at WAPA.

In 2023, a high point was meeting with WAPA's chapter of the International Brotherhood of Electrical Workers and other WAPA officials at Hoover Dam to celebrate the signing of the new collective bargaining agreement.

### What is something most people do not know about you?

I can be a real nerd about the work that is done throughout DOE – is there a cooler agency? Several years back, WAPA afforded me the opportunity to work detail positions with the Maintenance functions in both Sierra Nevada and Desert Southwest, as well as the Washington Liaison Office. While I never became a lineman, the knowledge I took back to the HR office resulted in better client relationships and on-target HR products. I am a huge fan of learning opportunities and programs such as those offered by the Leadership Development Program.

### What are you reading right now? Do you have a favorite author?

*Empires of Light* by Jill Jonnes is a must read. It discusses the race by Edison, Tesla and Westinghouse to electrify the world.

Another "voice" I've started listening to in the past six months is Johnny C. Taylor, Jr., the president and CEO of the Society for Human Resource Management. I'm reading *An Insider's Guide to Finding and Keeping the Best People*. You can follow Johnny on LinkedIn; I recommend it. He brings refreshing HR common sense.

### What is your style for both communication and leadership?

All new hires coming into HR know these principles:

- **Transparency.** If I can tell you, you'll know. Why? So you can make decisions independently in alignment with our mission.
- **Feedback.** Ask for feedback (good and bad), ask to give feedback, and provide it within seven days of a situation. Assume communication or relationship breakdowns will happen, and plan for them in advance. Hardwire it in. Twice a year, we schedule to get dialed-in, objective feedback on how our clients think we are doing and how the HR staff thinks HR leadership is doing.
- **Be a strategic partner.** Linemen use climbing hooks and hot sticks to achieve the mission. HR specialists use HR automation and procedures and laws to achieve the mission. HR is a "how," not a "what."

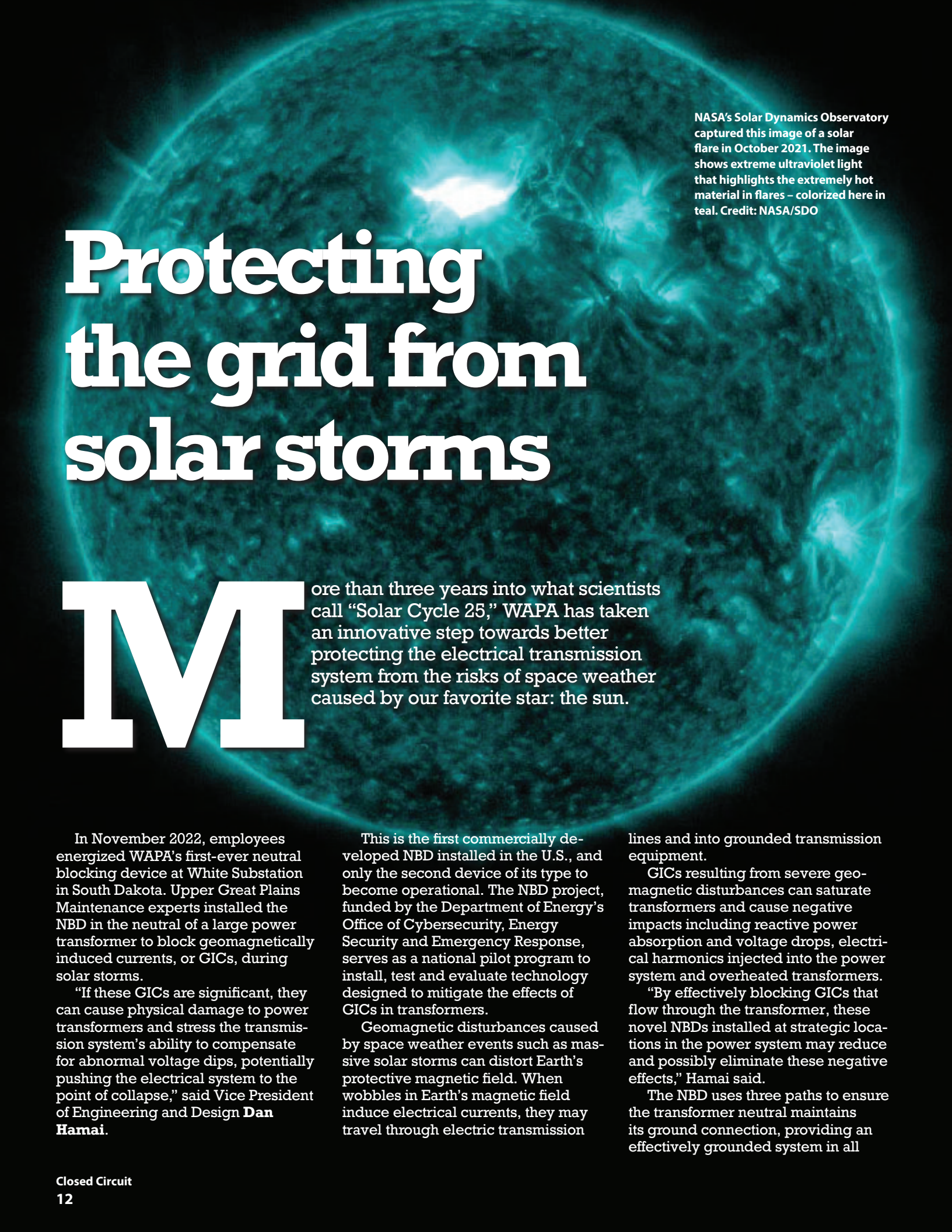
### During WAPA's period of maximum telework, what do you think was the most valuable lesson you learned as a leader?

Culture is always a challenge, especially as more and more work is performed outside the local office. We must work together to assure we are creating a shared reality; where people don't have information, they will make it up. We need to ensure a connection to the mission and create engagement. We are all responsible (not just management, not just HR).

"Culture is the lifeblood, the nucleus, the compass that points our organization in a singular direction and inspires us to row together."

- Johnny C. Taylor. □





NASA's Solar Dynamics Observatory captured this image of a solar flare in October 2021. The image shows extreme ultraviolet light that highlights the extremely hot material in flares – colorized here in teal. Credit: NASA/SDO

# Protecting the grid from solar storms

**M**ore than three years into what scientists call “Solar Cycle 25,” WAPA has taken an innovative step towards better protecting the electrical transmission system from the risks of space weather caused by our favorite star: the sun.

In November 2022, employees energized WAPA's first-ever neutral blocking device at White Substation in South Dakota. Upper Great Plains Maintenance experts installed the NBD in the neutral of a large power transformer to block geomagnetically induced currents, or GICs, during solar storms.

“If these GICs are significant, they can cause physical damage to power transformers and stress the transmission system’s ability to compensate for abnormal voltage dips, potentially pushing the electrical system to the point of collapse,” said Vice President of Engineering and Design **Dan Hamai**.

This is the first commercially developed NBD installed in the U.S., and only the second device of its type to become operational. The NBD project, funded by the Department of Energy’s Office of Cybersecurity, Energy Security and Emergency Response, serves as a national pilot program to install, test and evaluate technology designed to mitigate the effects of GICs in transformers.

Geomagnetic disturbances caused by space weather events such as massive solar storms can distort Earth’s protective magnetic field. When wobbles in Earth’s magnetic field induce electrical currents, they may travel through electric transmission

lines and into grounded transmission equipment.

GICs resulting from severe geomagnetic disturbances can saturate transformers and cause negative impacts including reactive power absorption and voltage drops, electrical harmonics injected into the power system and overheated transformers.

“By effectively blocking GICs that flow through the transformer, these novel NBDs installed at strategic locations in the power system may reduce and possibly eliminate these negative effects,” Hamai said.

The NBD uses three paths to ensure the transformer neutral maintains its ground connection, providing an effectively grounded system in all



operating modes. These paths include a solidly grounded metallic path, a GIC-blocking path using a capacitor bank and an overvoltage protective path through a spark gap. When the GICs exceed a threshold setting, the NBD automatically opens the solidly grounded path, which directs all neutral current through a low impedance capacitor bank, effectively stopping the rogue current from sneaking onto the transmission system.

GICs are quasi-direct current, meaning they oscillate at frequencies so low that they act like direct current. Significant and sustained direct currents are rare on WAPA's alternating current transmission system and can cause detrimental effects when they flow. This explains why engineers use a capacitor in the blocking path. When faced with a GIC, the capacitor functions like an open circuit, blocking the GIC's flow.

"Ultimately, the benefit of this NBD design is to mitigate GMD effects on the transformer while maintaining a solid metallic grounded neutral under normal operating conditions, which is critical for equipment insulation and protective relay operation," said Transmission System Planning Manager **Chris Colson**.

Following a GIC mitigation pilot program report from the Electric Power Research Institute, WAPA experts performed two system studies to identify and analyze preferred locations for the NBD within the organization's transmission system. In the first study, UGP transmission planners performed a specialized GIC flow study to determine how solar storms of varying orientations and magnitude may cause GICs to develop on the transmission system.

They simulated placing NBDs at various crucial nodes, including large power transformers at substations positioned to serve numerous customers and sites.

The experts then analyzed the effectiveness of a GIC-blocking device in the field. They determined the transformer "KU1A" at White Substation would make the best Upper Great Plains candidate for NBD installation.

"White KU1A met our criteria as a substation transformer that connects to three or more adjacent substations



An Upper Great Plains Maintenance crew quickly installed WAPA's new neutral blocking device at the White Substation in September 2022.

with large bulk electric system transformers," said Colson.

"In other words, blocking GICs at this transformer allows any significant GICs developed on the long 345-kilovolt transmission lines terminating at White Substation to become somewhat reduced, but more importantly safely redistributed, finding paths to ground at adjacent substations," he said.

For the second study, an architectural engineering firm completed the "White Substation NBD Impact Study," which included transient switching analysis, harmonics analysis and insulation assessment to evaluate the potential impact of the NBD.

If any of WAPA's technical studies showed potential damage to the transformer or negative impacts to system reliability, WAPA would not move forward to purchase and install these GIC mitigation devices.

"We were pleased to find out that no negative impacts were identified, so WAPA moved into the design and NBD specification phase," Hamai said.

After finalizing the designs, WAPA procured the NBD from Emprimus LLC, which delivered it to White Substation in September 2022. A South Dakota-based Maintenance crew then installed the NBD controls in an existing control panel.

Due to the uniqueness of the NBD to the transmission system, Emprimus provided operation and maintenance training to grid operators and

Maintenance staff. Commissioning took place over the next two months with successful energization in November.

"I often bemoan the sun's irate 'personality,' and maybe it was eager to put the White NBD to the test. In late February 2023, a moderate, double-coronal mass ejection that accompanied solar flares erupted from the sun, pointed at the Earth's orbital position," said Colson.

Just after midnight on Feb. 27, the solar storm rocked the Earth's magnetic field, giving rise to a strong GMD event. The National Oceanic and Atmospheric Administration's Space Weather Prediction Center, which uses a five-level scale similar to the hurricane wind-scale system, categorized the storm as a 'G3' GMD event.

"No worries, the White NBD was ready! On four separate occasions, the White NBD operated as expected, sensing the rise in GIC flow and automatically initiating its blocking during the space weather event that lasted about twelve hours," said Colson, who admits to eagerly awaiting the next coronal mass ejection event.

"With the White NBD in service and plans to extend the WAPA GIC monitoring network to improve situational awareness during GMD events, WAPA is well-positioned for whatever the sun cooks up," he added. □





Chief Strategy Officer *Kerry Whitford* addresses customers and staff during the first hybrid Annual Customer Meeting in February.

# Customer meeting, AEM jump start 2023

O

n Feb. 8, WAPA hosted its Annual Customer Meeting, a hybrid session based out of the Headquarters office in Lakewood, Colorado. For the first time, customers and employees could attend from the comfort of their offices or take the opportunity to network with WAPA and other customers in person.





Executive Vice President and Chief Operating Officer **Tina Ko** participates in one of the small group discussions during the Annual Customer Meeting at WAPA Headquarters.

The event provided insight into activities and accomplishments across the full spectrum of WAPA functional areas.

Following an introduction from Acting Chief of Staff **Christopher Lawrence**, Administrator and CEO **Tracey LeBeau** kicked off the meeting with remarks on a wide range of pressing issues including WAPA's annual theme of "Building Bridges," the *Power Forward 2030* strategic plan, drought response, sustainability goals and physical and cybersecurity. She also answered questions from customers in a Q&A session following her presentation.

The CEO session was followed by Executive Vice President and Chief Operating Officer **Tina Ko**, who discussed the current operating landscape, Senior Vice President and Chief Information Officer **Mike Montoya**, who provided a cybersecurity update, and Chief Strategy Officer **Kerry Whitford**, who took a deeper dive into the new strategic plan.

After a coffee and networking break, WAPA regional managers presented on the progress from WAPA's four regions and the Colorado River Storage Project Management Center. Then, Senior Vice President and Transmission Infrastructure Program Manager **Paul Schwabe** delivered updates on the TIP program.

In closing out the morning's talks, Senior Vice President and Chief Financial Officer **Mike Peterson** provided an overview and recent developments from the Finance office.

For the next hour, customers and employees broke out into small discussion groups where they interacted on the topics of security, drought and hybrid work.

After the close of the formal meeting around lunchtime, attendees were invited to stick around for an open house and networking opportunity with WAPA senior leaders.

Hosted via Microsoft Teams, the meeting was a prime occasion to use the recently installed Teams Rooms equipment in WAPA Headquarters' main conferencing area.

The following day, Feb. 9, more than 750 employees attended WAPA's first All-Employee Meeting of 2023. The meeting, organized by the Office of Public Affairs and emceed by Chief Public Affairs Officer **Teresa Waugh**, featured an array of topics and speakers.

During her *State of WAPA* segment, LeBeau presented updates about the organization's hot topics such as energy markets, supply chain outlook and staying connected and engaged while teleworking. She also showcased recent accomplishments such as the Records Management program's transfer of nearly 300 cubic feet of

paper records from Headquarters and Rocky Mountain to the National Archives and Records Administration.

Senior Vice President and Chief Administrative Officer **Jennifer Rodgers** delivered a presentation on *Power Forward 2030*, which had been formally released to the public earlier that week. She highlighted topline strategic goals and objectives that will set the organization's strategic destination for the next seven years. She underscored the intensive and inclusive customer, stakeholder and employee engagement that made the new plan possible.

The meeting also featured updates from Management and Program Analyst **Stacey Decker** on the Federal Employee Viewpoint Survey results and action plans, Future of Work and a Q&A session moderated by Lawrence.

Additionally, Transmission Asset Program Manager **Chris Lyles**, who was on detail to the Department of Energy, gave attendees a fascinating look inside the U.S. government's response to support Ukraine's electric power infrastructure in the face of devastating attacks. His talk featured meaningful images he'd captured while visiting Ukraine in his role with DOE.

The presentation slides and full video are available to employees on *myWAPA*. □



# WAPA restores power to rural California counties

By Stephen J. Collier



With record snowfalls pounding communities across northern California, WAPA's Sierra Nevada crews continue to battle Mother Nature's challenges to the area's energy grid.

In rural Trinity County, WAPA crews responded to three mutual aid requests going into late February. These support calls assisted hard-hit public utility districts with damage to their transmission lines caused by the mounting snowfalls. According to the University of California, Berkeley's Central Sierra Snow Lab, more than 55 feet of snow had fallen on northern California. This puts the 2022-2023 winter season on track to become the region's seventh largest ever recorded. And more snow is expected through May.

On Feb. 28, SN's North Area Field Maintenance Manager **Neil Cutright** received a call from the Trinity Public Utilities District, which services the 2,200-square-mile Trinity County. Trinity PUD asked for immediate assistance to help restore power to 7,300 customers. With two feet of snow already on the ground, and more falling, the county's Weaverville Substation had tripped, cutting power to 94 percent of its customers. Together with several power poles broken from the storm, Trinity PUD needed backup, and WAPA was ready to assist.

"We have a pretty good relationship with Trinity PUD," Cutright said. "They utilize us a lot when they have a problem. This county only has a small team of about six to seven linemen. Whenever they get storms that impact them a lot, they call us. We have an agreement for mutual aid where we're able to support at a moment's notice."

The solution seemed simple – WAPA's 60-kilovolt feed from Trinity to Weaverville was still in service. This allowed crews to connect WAPA's line to Trinity PUD's, instantly electrifying the vast majority of the county. But the snow drifts caused a second issue. By Trinity PUD's count, three poles had snapped, requiring immediate attention to ensure the integrity of the electrical grid.

"Our line crew was asked to replace the broken poles due to the heavy snow," Cutright said. "I had five of our linemen respond."

Most WAPA line crews live in nearby Shasta County, requiring a convoy of line trucks, utility vehicles and snowcats to make the hour drive west into Trinity. With cold weather gear ready, WAPA joined their Trinity PUD counterparts, combining crews to get the new poles up faster.

"A lot of times it takes a bit to get into the areas where the problem is. Sometimes we have to plow snow or even grade new roads to get into the areas," Cutright said. "It can take work just to get to sites, let alone fixing problems with transmission lines."

Wading through the thick snow, the crews replaced the poles and ensured both conductors and crossarms were properly installed. The work required a second day trip, with crews returning to finish the job.

Trinity PUD General Manager Paul Hauser praised WAPA linemen for their quick assistance getting the power back to Weaverville and Trinity County.

"Our relationship with WAPA is absolutely critical," said Hauser. "They are a regular and counted-on part of our emergency response plan. We get regular winter storms, and WAPA is familiar with our systems, and they know what it takes to keep the power going up here."

Hauser said that despite several years of drought with abnormally low amounts of precipitation, Trinity's relationship with WAPA has always been excellent.

"Our relationship is so critical we could not operate the way we do now without WAPA. I couldn't imagine what our operations would be like without them," he said.

Cutright said he was proud of the selfless work his crews do to ensure surrounding communities keep their lights on.

"These craftsmen are the backbone of WAPA," Cutright said. "They're the ones that go out in the middle of night during extreme cold or heat, or the worst weather you can imagine, and work day and night to do whatever needs to be done." □

*Note: The author is a public affairs specialist.*



# Safe spring cleaning

By Paul Robbins



**S**pring is here, and for many it is a fitting time to organize and clean their homes and workspaces.

Whether it be an office or shop area, a substation yard or just around the house, stay safe as you clean and remember the following points before you start.

## **Home cleaning chemicals**

The National Safety Council suggests reading labels when choosing cleaning

products for your home, especially if you have children.

Watch for three words on chemical containers: “Caution” signals a low level of possible harm. “Warning” identifies a higher level of potential risk, like serious illness or injury. “Danger” is the highest level of risk and can include mouth, throat or stomach damage if swallowed, in addition to skin tissue damage, blindness or death.

Because of the risks related to household cleaning products, always wear personal protective clothing, gloves and safety glasses as the manufacturer’s label recommends.

## **Green alternatives**

Consider using green cleaning alternatives, which are safer and less harmful than harsh chemicals. Some green cleaners have no odor and clean just as effectively. They can also be better for the environment.



## Cleaning products at work

Section 7.7.1 of WAPA's *Power System Safety Manual* states: "Use only approved cleaning solvents for which Safety Data Sheets are available. Follow the precautions listed on the SDS." It also states that these safeguards may include adequate ventilation and wearing personal protective equipment such as gloves, safety glasses and clothing.

## Slippery when wet

Slips, trips and falls are some of the most common cleaning hazards. Warn occupants when cleaning floors at home, and when at work post "wet floor" signs. If you spill something, wipe it up immediately to prevent a slipping hazard.

Keep areas free of clutter while you reorganize and move things around. Also, keep walkways clear of extension cords, files, boxes, stacked items and other tripping hazards.

## Safe climbing

Do not stand on chairs or climb furniture to reach higher places. Use a ladder and make sure it is the correct type and size for the job. Place it on a firm foundation, climb using three points of contact and do not stand on the top rung or step. Set extension ladders one foot away from the resting surface for every four feet of height. Wear slip-resistant footwear when climbing, and don't lean out or overreach while working on a ladder.

## Proper lifting

When lifting manually, bend at the knees and keep your back straight. Use smooth, balanced motions and avoid rapid, jerky movements. Ask for help when moving large or awkwardly shaped objects and use hand trucks, carts or pallet jacks to move heavy items.

Never mix cleaning products containing ammonia and bleach. This can cause the release of dangerous gases that may cause severe lung damage.



### When clearing out and cleaning an area, do not:

- Block fire doors or escape routes.
- Store heavy objects on upper shelves.
- Overload attic spaces.
- Stack items within 18" of sprinkler heads.
- Overload storage racks. Know their weight limitations.

## Avoid strains

Reduce the chance of injury by avoiding or minimizing pulling, pushing, lifting, bending, overreaching and twisting. These movements can be complicated by cramped work areas, poor body positioning, heavy lifting and the moving of awkwardly shaped items.

The change of season is an appropriate time for cleaning. Protect yourself and others as you do. □

*Note: Information in this article was adapted from the National Institute for Occupational Safety and Health and the Occupational Safety and Health Administration. Robbins is a technical writer who works under the Cherokee Nation Strategic Programs contract.*

Always store cleaning products out of the reach of children. If they are ever ingested, immediately call the Poison Control Hotline at 800.222.1222.



## Positive effects of spring cleaning on the mind and body

Spring cleaning helps improve our surroundings; however, did you know that it also positively affects the mind and body? Research shows that anxiety and stress are linked to cluttered surroundings.

"A study by the Princeton Neuroscience Institute discovered that in disorganized spaces, people are more stressed, distracted, and less productive," according to Psychology Today. "Clutter can be visually distracting and serve as a nagging reminder of tasks and chores undone."

The same study said that cleaning can positively affect mental health, giving people, "a sense of mastery and control over their environment."

This is because we increase our self-esteem as we clean, which causes an energy shift that opens us up psychologically. This process can be enhanced if as one cleans, they imagine clearing their mind of mental clutter such as regrets, conflict and other negative thoughts.

Strengthening personal wellness through cleaning and organizing also has other positive health benefits, according to Studyfinds.org. They include improved relaxation and sleep; decreased stress and anxiety; heightened focus and increased productivity.

All that and exercise too. Gardening, vacuuming and even ironing can burn 150 to 300 calories an hour, and that is just a start.



## Rapid Recaps

### ITSLT takes field trip to CSU Spur

**W**APA's Information Technology Senior Leadership Team met Feb. 22-23 in Lakewood, Colorado. In addition to their scheduled meetings, they toured the Colorado State University Spur campus located within the National Western Center in Denver. They toured three buildings – Hydro, Terra and Vida. The Hydro building connects visitors to water, showcases careers in water, and advances water management and policy.

Vice President of Information Technology – Enterprise Applications **Joe Fast** and VP of IT – Infrastructure **Greg Hansen** experimented with a “stream table,” one of many interactive educational exhibits in CSU Spur's Hydro building. The table has tilting mechanisms that allow students to simulate river processes such as floodplains, deltas, groundwater processes and sediment transport on a variety of landscapes. IT leaders evaluated the landscape, considered where best to build houses, plant trees and corral livestock, then watched what happened when the area flooded.



Members of the ITSLT experiment with a stream table at CSU Spur.

### Teams Rooms coming soon

**A**fter a year-long pilot effort, Information Technology is officially rolling out Microsoft Teams Rooms across WAPA's footprint. A Teams Room brings Microsoft Teams capabilities of audio, video and content sharing to meetings of all sizes, specifically accommodating the hybrid work environment.

As WAPA began defining its return to work and future of work states, it became clear that the previous video conferencing system could not meet the organization's collaboration needs. Teams Rooms bridge the gap between employees working from home, in the field and in an office, allowing all attendees to participate fully from almost anywhere on any device. Teams Rooms are also compatible with WebEx meetings.

By the end of March, 35 Teams Rooms had been installed across WAPA – at least one in each region. This month, another 13 rooms are being installed. IT aims to install the systems in 66 rooms at 16 different sites by the end of summer.

In addition to delivering an improved hybrid meeting experience, Teams Rooms are easy to use. However, to support the rollout of the new equipment and technology, IT has published user guides, is conducting administrative training for calendars, and is hosting on-site open houses as they install equipment.

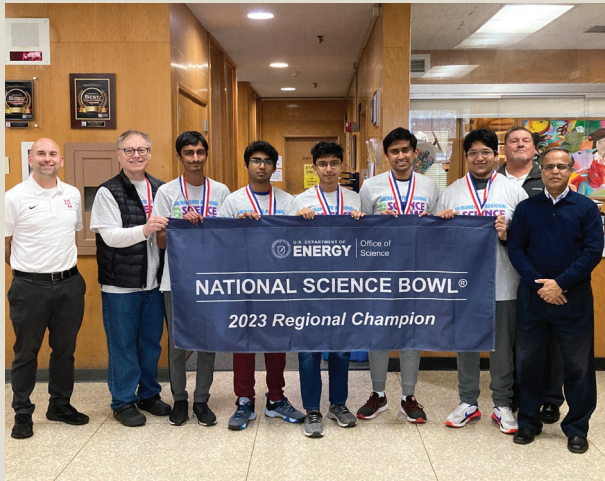
If you haven't yet seen a Teams Rooms in your area, know that it is coming soon.

If you have questions about the Teams Rooms rollout or schedule, check out the “Rolling out Teams Rooms” story on the *myWAPA* homepage. If you have technical questions about using Teams Rooms, contact the WAPA IT Call Center or your local Desktop Support person.



Information Technology Project Manager **Shane Johnson** and IT Support Services Contract Program Manager **Ben Whitney** configure a Microsoft Teams Rooms mobile unit, Feb. 13, in Loveland, Colo.

## Brief Transmissions



### WAPA continues science bowl legacy

**T**he U.S. Department of Energy National Science Bowl tests middle and high school students' knowledge in all areas of science and mathematics. Again in 2023, WAPA hosted regional competitions across its footprint. For example, in Sierra Nevada, twelve high school teams from the Sacramento region participated in the regional event on Feb. 11 with the help of 18 external and six WAPA volunteers. Upper Great Plains hosted the Big Sky Regional Science Bowl on March 10 in Billings, Montana, in which 14 teams participated.

Check out the full stories at [myWAPA, More Announcements.](#)



### ESIG recognizes UGP Regional Manager

**O**n March 28, the Energy Systems Integration Group honored WAPA Senior Vice President and Upper Great Plains Regional Manager **Lloyd Linke** with a 2023 Excellence Award. Linke received the award for his "three years of faithful service to the ESIG Advisory Council."

Based in Reston, Virginia, the nonprofit ESIG brings together technical experts from across the electricity industry to enable grid transformation and systems integration. ESIG's Excellence Awards recognize experts in the field for their achievements in planning and operations of "reliable, economic and sustainable" energy systems.

### Crews repair impacted line

**O**n March 7, WAPA emergency crews, together with medical and law enforcement personnel in California's Glenn County, responded to a crop-duster aircraft crash near the Willows-Glenn County Airport. In the early evening, the aircraft made contact with the nearby Keswick-to-O'Banion and O'Banion-to-Olinda 230-kilovolt high-voltage transmission lines. The accident resulted in the death of the pilot, as well as damage to transmission lines and support equipment. WAPA Maintenance staff worked to repair the damaged components, and power outages to the surrounding communities were minimal.

